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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/596,051	05/26/2006	Toru Takenaka	SAT-16655	1188
40854 7590 01/31/2008 RANKIN, HILL & CLARK LLP 38210 Glenn Avenue WILLOUGHBY, OH 44094-7808			EXAMINER PAUL, ANTONY M	
			ART UNIT 2837	PAPER NUMBER
			MAIL DATE 01/31/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/596,051	Applicant(s) TAKENAKA ET AL.	
	Examiner Antony M. Paul	Art Unit 2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>06/19/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

NON-FINAL REJECTION

Claim Objections

1. Claims 4 and 5 are objected to because of the following informalities: In regard to claims 4 and 5, the phrase, "a second predetermined portion," is not clear as to which is a first predetermined portion? Appropriate correction is required.

Claim Rejections 35 USC§ 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 1 thru 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Takenaka et al. (5,432,417).

In regard to claims 1 and 2, Takenaka et al. disclose in fig.1 a control system for a legged mobile robot (column 1, lines 7-10) comprising a base body [24], a plurality of link mechanisms such as thigh links [32R, 32L] connected to the base body [24] to move the base body (walk, column 1, line 9, column 4, lines 10-16) and that come in contact with externals such as ground (figs.5-6, column 4, lines 33-37) and a plurality of joints [10R, 10L] (column 3, lines 50-68, column 4, lines 1-9) provided between base body [24] and distal portions such as foot members [22R, 22L] of the link mechanisms [32R, 32L] to make the distal portions [22R, 22L] of the link mechanisms [32R, 32L] movable (locomotion, column 4, lines 1-15) with respect to the base body [24], The legged mobile robot operated (motors, column 3, lines 54-58) to a specific motion posture (walk, figs. 6A-D) in which the robot is in contact with an external such as ground (fig.5) at predetermined portions such as portions of foot members [22R, 22L] (figs.5-6, predefined, see column 10, lines 25-34, column 14, lines 47-50,

predetermined, see column 17, lines 60-66) between the distal portions such as foot portions [22R, 22L] of one or more specific link mechanisms [32 R, 32L] among the plurality of link mechanisms [32R, 32L, 34R, 34L] and the base body [24], the control system [26] comprising:

An external force detecting means [36] (sensor, column 4, lines 24-37), a desired external force determining means for determining a desired external force (figs.5-6, column 5, lines 45-53, column 6, lines 1-8, 52-63, column 11, lines 29-30), which is a desired value (such as a target value P' , see figs 5-6, column 5, lines 45-59, column 10, lines 1-3) of the external force(ground reaction force, fig.5) on the predetermined portion in the specific motion posture (such as walking pattern, figs 5-6) and

A joint controlling means [26] (column 4, lines 48-68, column 7, lines 68, column 8, line 1, see fig.3 step 26) for controlling the displacement of ~~at~~^{at} least a joint (rotation, column 1, lines 55- 68, column 4, lines 1-9) existing between the predetermined portion such as foot portion [22R, 22L], fig.1) and the base body [24] such that the detected external force [P] approximates the desired external force [P'] (figs 5-6, column 5, lines 33-68, column 6, lines 1-8, column 6, lines 64-68, column 7, lines 1-24, column 13, lines 23-26, fig.14).

In regard to claim 3, Takenaka et al. disclose in fig.1 a control system [26] for a mobile robot, wherein the specific link mechanisms [32 R, 32L] extended from buttocks [12R, 12L] (such as bottom of body [24] (hip, see column 3, lines 55-68, column 4, lines 1-9) and the predetermined portion is the buttocks such as the hip [12R, 12L].

In regard to claim 4, Takenaka et al. disclose in fig.1 a control system [26] for a mobile robot comprising an actual posture detecting means [36] (fig.4, step 100 and 102, see figs 5-6) for detecting the actual posture [P] of a second predetermined portion such as the base body (such as the base of a foot RFFV connecting a body [24], see

figs. 5-6, column 5, lines 35-53) of the mobile robot (fig.1) and a desired motion determining means (target, column 5, lines 45-53, column 6, lines 1-8, 52-63, column 11, lines 29-30, see figs.5-6) for determining a desired posture [P'] of the second predetermined portion [RFFV] wherein the desired external force determining means (see explanation in claim 1) determines the desired external force on the basis of at least the difference between the actual posture [P] and the desired posture [P'] of the second predetermined portion [RFFV] (see column 6, lines 52-68, column 7, lines 1-25 and column 9, lines 50- 62, se figs. 13 &14).

In regard to claim 5, Takenaka et al. disclose in figs.1, 5-6 a control system [26] for a mobile robot, wherein the joint controlling means [26] (see explanation in claim 1) comprises a means for determining the manipulated variable (such as a position P) of an external force such as ground reaction force (fig.5) on the basis of the difference between the actual posture [P] and the desired posture [P'] (the limitations are explained in claim 4 above). The detected force [P] (actual force, fig.5) approximates the desired external force [P'] (fig.5, column 5, lines 35-68 & column 6, lines 1-8).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Antony M. Paul whose telephone number is (571) 270-1608. The examiner can normally be reached on Mon - Fri, 7:30 to 5, Alt. Fri, East. Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lincoln Donovan can be reached on (571) 272-1988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AP AP 01/17/2008


LINCOLN DONOVAN
SUPERVISORY PATENT EXAMINER